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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,163	11/21/2003	Randy J. Longsdorf	R11.12-0812	2356

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EXAMINER
CHANG, SUNRAY

ART UNIT	PAPER NUMBER
2121	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

		Application No.	Applicant(s)
Office Action Summary		10/719,163	LONGSDORF ET AL.
		Examiner	Art Unit	
		Sunray Chang	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 November 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-51</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-51</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in responsive to the paper filed on November 2nd, 2006.

Claims 1 – 51 are presented for examination.

Claims 1, 36 and 37 have been amended.

Claims 1 – 51 are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

    1.   Determining the scope and contents of the prior art.
    2.   Ascertaining the differences between the prior art and the claims at issue.
    3.   Resolving the level of ordinary skill in the pertinent art.
    4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   **Claim 1 is rejected under the second paragraph of 35 U.S.C. 112,**

The term, "a device interface", which can not be both in the process device and can be coupled to the process device like a separate element as claimed in claim 1.

3. **Claims 1 – 8, 10 – 12, 15 – 42, 44, 45, 47 – 51 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Evren Eryurek (U.S. Patent No. 6,017,143 and referred to as **Eryurek143** hereinafter), in view of Evren Eryurek (U.S. Patent No. 5,828,567 and referred to as **Eryurek567** hereinafter), and further in view of Edward R. Sederlund et al. (U.S. Patent No. 6,647,301 and referred to as **Sederlund** hereinafter).

(**Eryurek143** as set forth above generally discloses the basic inventions.)

Regarding independent claims 1, 36 and 37,

Eryurek143 teaches,

- A transmitter for use in an industrial process, [Col. 3, Lines 9 – 12] comprising:

- a sensor module [16, Fig. 1] configured to couple to the process and measure a process variable; [Col. 3, Lines 9 – 12]

- a feature module configured to couple to the sensor module, [Abstract, Col. 1, Lines 44 – 64; and Fig. 1] the feature module including:

- a device interface configured to couple to the process device [Abstract] and provide an output related to operation of a component of the process device; [an input which receives a process signal, Col. 1, Lines 44 – 45]

- a component monitor in the process device configured to monitor operation of the component based upon the output from the device interface and identify a safety event of the component;

[Col. 8, Line 30 – Col. 9, Line 14; computing circuitry provides an event output … in

response to, Col. 1, Lines 53 – 57; provide an event output, Col. 1, Line 44 – 64; rules are

selected to detect events, Col. 1, Lines 44 – 64] and provide a safety event output [typically,

… pressure is monitored and an alarm is sounded or a safety shutdown is initiated if the

process variable exceeds predetermined limits, Col. 1, lines 31 – 36]; and

- a safety response module in the process device configured to respond to the safety event of

the component based upon the safety event output [typically, … pressure is monitored and an

alarm is sounded or a safety shutdown is initiated if the process variable exceeds

predetermined limits, Col. 1, lines 31 – 36] in accordance with a safety response. [Col.. 6,

Lines 21 – 42; provide an event output, Col. 1, Line 44 – 64; rules are selected to detect

events, Col. 1, Lines 44 – 64]

Eryurek143 does not teach Safety Integrity Level (SIL), further, applicant argues that

reference Eryurek143 fails to disclose "a component monitor in the process device configured

to monitor operation of the component".

Eryurek567 teaches a component monitor configured to monitor operation of the

component [Transmitter in a process control system includes a resistance sensor sensing a

process variable and providing a sensor output. Sensor monitoring circuitry coupled to the sensor

provides a secondary signal related to the sensor, Abstract], for the purpose of diagnostics for

resistance based transmitter [Col. 1, lines 1 – 2].

Sederlund teaches Safety Integrity Level (SIL) [Abstract, Col. 1, Lines 14 – 17; Col. 2,

Lines 45 – 50; Col. 9, Lines 31 – 61; Col. 12, 12 – 60; Col. 22, Line 52 – Col. 24, Line 10] for

the purpose of providing a rule set [Col. 12, Lines 12 – 60].

It would have been obvious to a person of ordinary skill in the art at the time of

applicant's invention to modify the teaching of **Eryurek** to include "Safety Integrity Level

(SIL)" for the purpose of providing a rule set [Col. 12, Lines 12 – 60].

Regarding dependent claim 2,

Eryurek143 teaches, the apparatus of claim 1 wherein the device interface comprises

- a connection to a databus of the process device. [Col. 2, Line 65 – Col. 3, Line 33; Fig. 1]

Further explanation, The term, "databus", has been interpreted to as "2-wire process

control loop" based on the definition in specification [Page 16, Line 29; Page 17, Lines 1 – 12,

and 21; Fig. 3 and Fig. 1]

Regarding dependent claims 3, 21, 28 and 38,

Eryurek143 teaches, an apparatus wherein

- the component monitor is configured to monitor data carried on the databus. [monitors the

  process and performs computations, Col. 3, Lines 22 – 25; Col. 8, Line 30 – Col. 9, Line 14]

Regarding dependent claim 4,

Eryurek143 teaches, the apparatus of claim 1 wherein the device interface comprises

- a sensor coupled to the process device. [16, Fig. 1; sensor, Col. 3, Lines 9 – 12; Col. 4, Lines

  35 – 42]

Regarding dependent claims 5 and 40,

Eryurek143 teaches, an apparatus wherein

- the process device couples to a process control loop and sensor is configured to monitor current flow in the process control loop. [diagnostic signal sensed by sensor, Col. 4, Lines 38 – 42; diagnostic signals include ... electrical voltage, current ... Col. 2, Lines 46 – 57]

Regarding dependent claims 6 and 41,

Eryurek143 teaches, an apparatus wherein

- the component monitor compares the sensed current with a current value. [diagnostic signal sensed by sensor, Col. 4, Lines 38 – 42; diagnostic signals include ... electrical voltage, current ... Col. 2, Lines 46 – 57; determines faulty, Col. 8, Lines 42 – 44]

Regarding dependent claims 7 and 42,

Eryurek143 teaches, an apparatus wherein

- the safety response module controls the current in a process control loop based upon a safety failure. [diagnostic signal sensed by sensor, Col. 4, Lines 38 – 42; diagnostic signals include ... electrical voltage, current ... Col. 2, Lines 46 – 57; determines faulty, Col. 8, Lines 42 – 44; statistical parameter mean, current means, Col. 6, Lines 21 – 42]

Regarding dependent claim 8,

Eryurek143 teaches, the apparatus of claim 1, the device interface

Sederlund teaches a watch dog circuit [Col. 7, Lines 19 – 20; Fig. 35].

Regarding dependent claim 10,

Eryurek143 teaches, the apparatus of claim 1, wherein

- the device interface couples to a memory. [input, memory, Col. 1, Lines 44 – 46]

Regarding dependent claims 11 and 44,

Eryurek143 teaches, an apparatus, wherein

- the component monitor is configured to detect errors in the data stored in the memory. [Col. 8, Line 42 – Col. 9, Line 10]

Regarding dependent claims 12 and 45,

Eryurek143 teaches, an apparatus, wherein

- the safety response module provides an alarm output. [alarm is sounded, Col. 1, Lines 34 – 35]

Regarding dependent claims 15 and 47,

Eryurek143 teaches, an apparatus, wherein

- the safety response module attempts to compensate for the safety failure. [defines the acceptable variations, Col. 6, Lines 21 – 42]

Regarding dependent claims 16 and 48,

Eryurek143 teaches, an apparatus, wherein

- the safety response module corrects for errors in data in the device. [adjusted by adjusting the sensitivity parameter, Col. 6, Lines 56 – 59]

Regarding dependent claim 17,

Eryurek143 teaches, the apparatus of claim 16, wherein

- the safety response module interpolates between data points in order to correct a data error. [adjusting value by changing the flow in pipe, Col. 3, Lines 15 – 33]

Regarding dependent claim 18,

Eryurek143 teaches, the apparatus of claim 16, wherein

- the safety response module holds a previous data point. [Col. 5, Lines 51 – 53]

Regarding dependent claims 19 and 49,

Eryurek143 teaches, an apparatus, wherein

- the sensor comprises a voltage sensor. [electrical voltage … or any parameter … maybe detected, Col. 2, Lines 42 – 64]

Regarding dependent claims 20 and 50,

Eryurek143 teaches, an apparatus, wherein

- a current sensor. [current … or any parameter … maybe detected, Col. 2, Lines 42 – 64]

Regarding dependent claim 22,

Eryurek143 teaches, the apparatus of claim 1 wherein the component monitor comprises

- software implemented in a microprocessor of the device. [Col. 10, Lines 2 – 5]

Regarding dependent claims 23 and 51,

Eryurek143 teaches, an apparatus wherein the safety event comprises

- a possibility of a future component failure. [exceed predefined limits, Col. 1, Lines 34 – 36]

Regarding dependent claim 24,

Eryurek143 teaches, an apparatus wherein the safety event comprises

- a detection of a component failure. [faulty device, Col. 9, Lines 43 – 45]

Regarding dependent claim 25,

Eryurek143 teaches a process variable transmitter including the apparatus of claim 1.
[12, Fig. 1]

Regarding dependent claim 26,

Eryurek143 teaches the transmitter of claim 25 wherein

- the safety response module is implemented in a feature module which couples to a sensor
  module. [Fig. 2 and Col. 10, Lines 2 – 5]

Regarding dependent claim 27,

Eryurek143 teaches the transmitter of claim 25 wherein

- the safety response module is implemented in a feature module which couples to a plurality

  of sensor modules. [Fig. 2 & Col. 10, Lines 2 – 5 & Col. 8, Lines 65 – 66]

Regarding dependent claim 29,

Eryurek143 teaches the apparatus of claim 25 including

- a display and wherein the component monitors data sent to the display. [a display, Col. 4,

  Lines 44 – 58]

Regarding dependent claim 30,

Eryurek143 teaches a process controller including the apparatus of claim 1. [Fig. 1]

Regarding dependent claim 31,

Eryurek teaches a device in a Safety Instrumented System (SIS) in accordance with

claim 1. [Col. 1, Lines 34 – 41]

Regarding dependent claim 32,

Eryurek143 teaches the apparatus of claim 1 wherein

- the component monitor is configured to monitor a plurality of process devices. [Col. 3, Lines

  34 – 36; 208, Fig. 6]

Regarding dependent claim 33,

Eryurek143 teaches the apparatus of claim 1 wherein

- the component monitor and safety response module are implemented in software. [Col. 10, Lines 2 – 5]

Regarding dependent claim 34,

Eryurek143 teaches an apparatus wherein

- the software is configured to upgrade an existing process device.

Regarding dependent claim 35,

Eryurek143 teaches,

- a feature module configured to upgrade an existing process device. [Col. 9,Line 65 – Col. 10, Line 10]

Regarding dependent claim 39,

Eryurek143 teaches, the method of claim 37 wherein

- the sensing uses a sensor coupled to the process device. [Col. 3, Lines 9 – 12]

4.   **Claims 9 and 43 are rejected** under 35 U.S.C. 103(a) as being unpatentable over

Eryurek143 in view of **Eryurek567** and **Sederlund,** and further in view of Paul J. Hays et al.

(U.S. Patent No. 6,476,522 and referred to as **Hays** hereinafter).

Regarding dependent claims 9 and 43,

Eryurek143 teaches, an apparatus with a device interface [Abstract, Col. 1, Lines 44 –

45]

Hays teaches sense power drawn by circuitry of the process device. [electronic

components for controlling power drawn by a measurement device, Col. 1, Lines 7 – 8 &

Abstract] for the purpose of controlling power drawn [Col. 1, Lines 7 – 8]

5.   **Claims 13, 14 and 46 are rejected** under 35 U.S.C. 103(a) as being unpatentable over

Eryurek143 in view of **Eryurek567** and **Sederlund,** and further in view of Gordon M. Sommer

(U.S. Patent No. 4,356,900 and referred to as **Sommer** hereinafter).

Regarding dependent claims 13, 14 and 46,

Eryurek143 teaches, an apparatus with a device interface [Abstract, Col. 1, Lines 44 –

45]

Sommer teaches the safety response module disconnects the process device from a

process control loop. [deactuate the clutch unit so as to disconnect the motor from the driving

apparatus in response to abnormal operating conditions, Abstract] for the purpose of safety

[Abstract]

Response to Amendment

Claim Rejections - 35 USC § 102&103

6.   Applicant argues the **Eryurek143** reference fails to disclose newly amended claim

limitation, "a component monitor in the process device configured to monitor operation of the

component". The examiner combines a forth cited reference of **Eryurek** (#5,828,567 1998) with

Eryurek143 reference making a new ground of rejections in current office action.

7.   **Claims 52 – 55** have not been announced to be withdrawn by the applicant, yet, claims

52 – 55 are not submitted with new sets of claims.
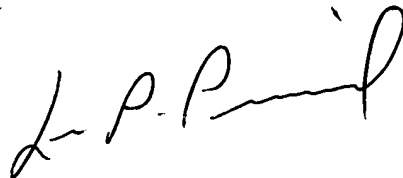
Conclusion

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Sunray Chang whose telephone number is (571) 272-3682. The

examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-746-3506.

Anthony Knight
Supervisory Primary Examiner
Group Art Unit 2121
Technology Center 2100
U.S. Patent and Trademark Office

December 21, 2006

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100